



# TENNESSEE

Gateway Assessment

## Practice Test



# Science

16023





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# Contents

Introduction to Gateway Science.....	4
Content of Tests.....	4
Test Development.....	4
Test Administration .....	4
Tips for Taking the Test .....	5
Preparing for the test.....	5
Before the test.....	5
During the test.....	5
Answer Sheet for the Practice Test .....	6
Directions for Taking the Practice Test .....	7
Gateway Science Practice Test.....	8
Answer Key .....	48
Reporting Categories.....	49





## Introduction to Gateway Science

### Content of Tests

The testing program titled the *Tennessee Gateway Assessment* was established to meet the Tennessee mandate for high stakes, end of course assessments in Tennessee secondary schools. These tests measure the Tennessee State Performance Indicators. Subject areas covered by the Gateway Assessments include Mathematics, Language Arts, and Science.

### Test Development

For the *Tennessee Gateway Assessment*, professional item writers experienced in each of the content areas researched and wrote the items. Professional editors and test developers carefully reviewed all items and test directions for content and accuracy. To provide a large pool of items for final test selection, the test developers created approximately 50% more items as were needed in the final editions of the tests.

After the items were field tested, student responses were analyzed. Professional content editors and researchers carefully reviewed items, their data, and test directions for content, suitability, and accuracy before including certain items and test directions in operational tests.

### Test Administration

*Tennessee Gateway Assessment* tests are given to students as they are completing courses that are included in the program. Tests may be given midyear for block schedules or at the end of the year.

Each test contains 62 multiple-choice questions.

You will have ample time to read and answer each of the questions. Each test has been designed to be administered in one session and is untimed. The first 15 minutes are set aside to complete identifying data on the answer sheet.





## Tips for Taking the Test

### Preparing for the test

- Take this Practice Test several times.
- Review the Tennessee Gateway Item Sampler for Science located at [www.state.tn.us/education/](http://www.state.tn.us/education/) on the Tennessee Department of Education Web site.
- Become familiar with the correct way to mark answers on the answer sheet. There is a sample answer sheet in this Practice Test.

### Before the test

- Get a good night's sleep. To do your best, you need to be rested.

### During the test

- Relax. It is normal to be somewhat nervous before the test. Try to relax and not worry.
- Listen. Listen to and read the test directions carefully. Ask for an explanation of the directions if you do not understand them.
- Plan your time. Do not spend too much time on any one question. If a question seems to take too long, skip it and return to it later if you have extra time. First answer all questions that you are sure about.
- Think. If you are not sure how to answer a question, read it again and try your best to answer the question. Rule out answer choices that you know are incorrect and choose from those that remain.





### Answer Sheet for the Practice Test

1 (A)(B)(C)(D)	14 (F)(G)(H)(J)	27 (A)(B)(C)(D)	40 (F)(G)(H)(J)	53 (A)(B)(C)(D)
2 (F)(G)(H)(J)	15 (A)(B)(C)(D)	28 (F)(G)(H)(J)	41 (A)(B)(C)(D)	54 (F)(G)(H)(J)
3 (A)(B)(C)(D)	16 (F)(G)(H)(J)	29 (A)(B)(C)(D)	42 (F)(G)(H)(J)	55 (A)(B)(C)(D)
4 (F)(G)(H)(J)	17 (A)(B)(C)(D)	30 (F)(G)(H)(J)	43 (A)(B)(C)(D)	56 (F)(G)(H)(J)
5 (A)(B)(C)(D)	18 (F)(G)(H)(J)	31 (A)(B)(C)(D)	44 (F)(G)(H)(J)	57 (A)(B)(C)(D)
6 (F)(G)(H)(J)	19 (A)(B)(C)(D)	32 (F)(G)(H)(J)	45 (A)(B)(C)(D)	58 (F)(G)(H)(J)
7 (A)(B)(C)(D)	20 (F)(G)(H)(J)	33 (A)(B)(C)(D)	46 (F)(G)(H)(J)	59 (A)(B)(C)(D)
8 (F)(G)(H)(J)	21 (A)(B)(C)(D)	34 (F)(G)(H)(J)	47 (A)(B)(C)(D)	60 (F)(G)(H)(J)
9 (A)(B)(C)(D)	22 (F)(G)(H)(J)	35 (A)(B)(C)(D)	48 (F)(G)(H)(J)	61 (A)(B)(C)(D)
10 (F)(G)(H)(J)	23 (A)(B)(C)(D)	36 (F)(G)(H)(J)	49 (A)(B)(C)(D)	62 (F)(G)(H)(J)
11 (A)(B)(C)(D)	24 (F)(G)(H)(J)	37 (A)(B)(C)(D)	50 (F)(G)(H)(J)	
12 (F)(G)(H)(J)	25 (A)(B)(C)(D)	38 (F)(G)(H)(J)	51 (A)(B)(C)(D)	
13 (A)(B)(C)(D)	26 (F)(G)(H)(J)	39 (A)(B)(C)(D)	52 (F)(G)(H)(J)	





## Directions for Taking the Practice Test

In this Practice Test, you will answer various science questions. You may write in the open spaces in this book to work the questions, but remember to fill in the circle on your answer sheet that goes with the answer you choose for each question. Fill in the circle completely and make your mark heavy and dark. If you want to change an answer, erase the mark you made and make a new mark.

You will do the items in this Practice Test by yourself. Remember to read all the directions carefully. When you see the words *Go On* at the bottom of the page, go to the next page. When you come to the word STOP, you have finished this test. When you have finished, you may check your answers.

On your answer sheet, find Number 1. Mark your answers beginning with Number 1. You may begin. Stop when you have finished the test.

At the end of the Practice Test, make sure that all your marks are heavy and dark and that you have completely erased any marks that you do not want.

Turn to Page 48 and locate the Answer Key. Check your answers and review those items that you marked incorrectly.

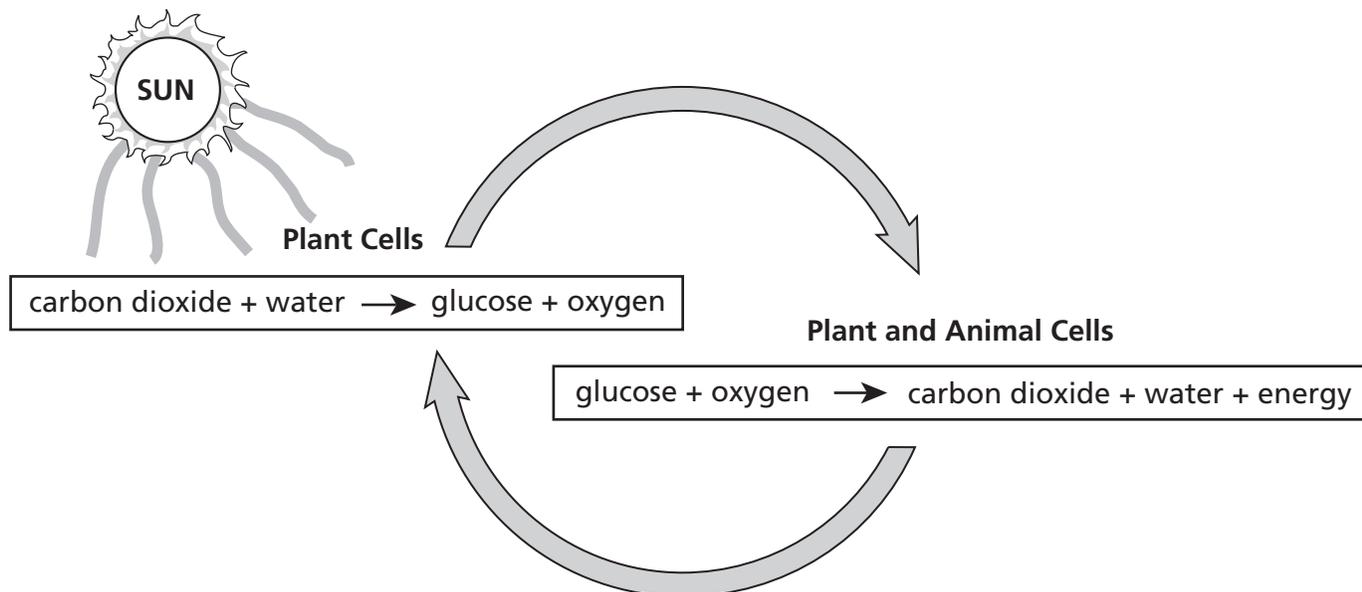
## Gateway Science Practice Test

- 1** Vertebrates have a pair of round organs, each containing two chambers. The front chamber is filled with fluid and the back chamber is filled with a clear, jelly-like substance. The back wall of each organ contains many cells that are stimulated by light.

What is the function of these organs?

- A hearing
- B circulation
- C vision
- D reproduction

- 2** The diagram below shows the relationship between photosynthesis and respiration.

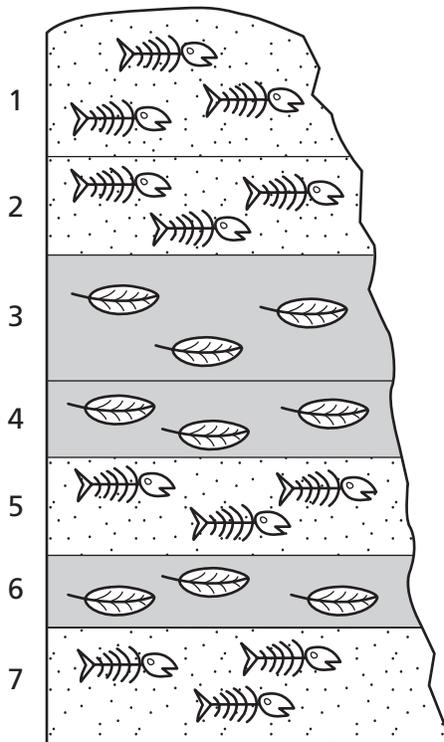


What are the products of photosynthesis?

- F energy and oxygen
- G glucose and oxygen
- H carbon dioxide and water
- J glucose and carbon dioxide

**Go On ►**

3 A team of scientists is studying the fossils in the cross-section of rock shown below.

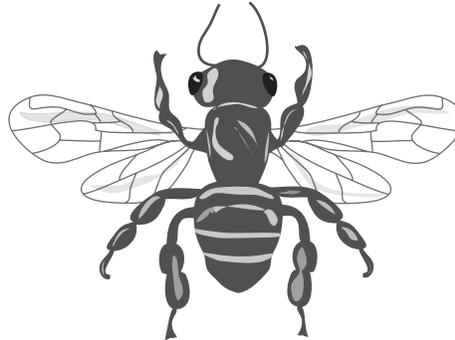


In which layers of rock are the oldest leaf and fish fossils found?

- A layers 1 and 3
- B layers 2 and 4
- C layers 3 and 7
- D layers 6 and 7

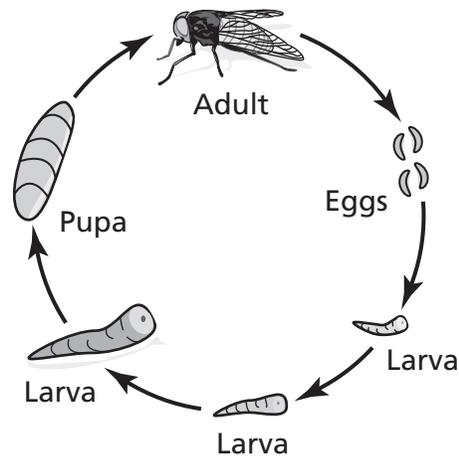


4 The body symmetry of the honeybee shown below can best be determined by



- F dividing it into four equal parts
- G dividing it into two equal halves
- H dividing it into six parts around a central axis
- J dividing it into an odd number of parts around a central axis

FLY LIFE CYCLE



5 The diagram shows an example of

- A insect evolution
- B incomplete metamorphosis
- C complete metamorphosis
- D alternation of generations

Go On ►





- 6** In a deciduous forest ecosystem, a white-tailed deer eats tree leaves while a Cooper's hawk hunts a downy woodpecker. In the ground, earthworms break down leaves.

The Cooper's hawk is classified as a

- F** producer
- G** decomposer
- H** parasite
- J** consumer

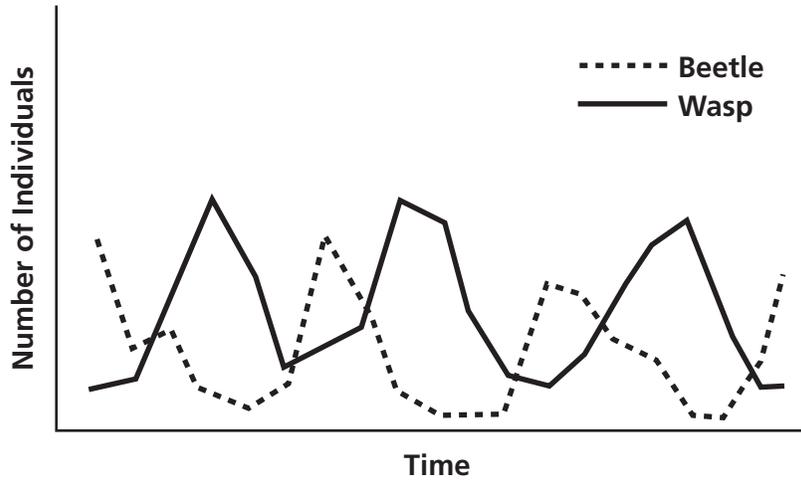
- 7** An isolated population of fritillary, a species of butterfly, lives in a damp meadow. The fritillary larvae feed only on a species of violet plant that lives in the meadow. The adult fritillary does not fly far from the violet plants. One summer, a virus causes the violet plants to die.

As a result of the absence of violets, the fritillary population will most likely

- A** increase and flourish
- B** decrease to a level near extinction
- C** switch to a different type of food
- D** evolve immediately into a new species of butterfly



- 8 The graph below shows the changes in the populations of beetles and wasps. The wasp larvae feed on the beetle larvae.



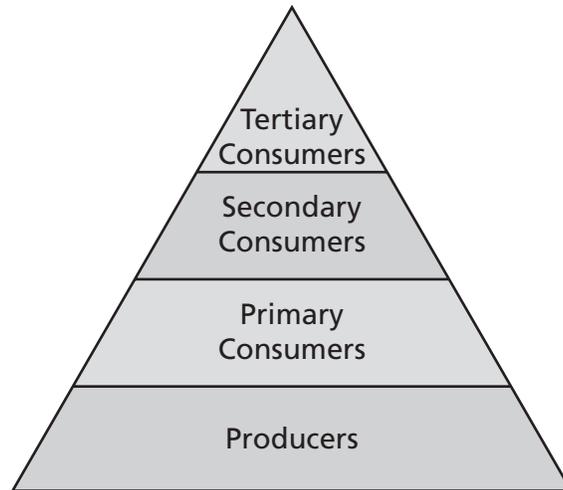
The beetle population is highest when the wasp population is

- F low
- G high
- H steady
- J at zero





**9** The figure below shows an energy pyramid for an ecosystem.



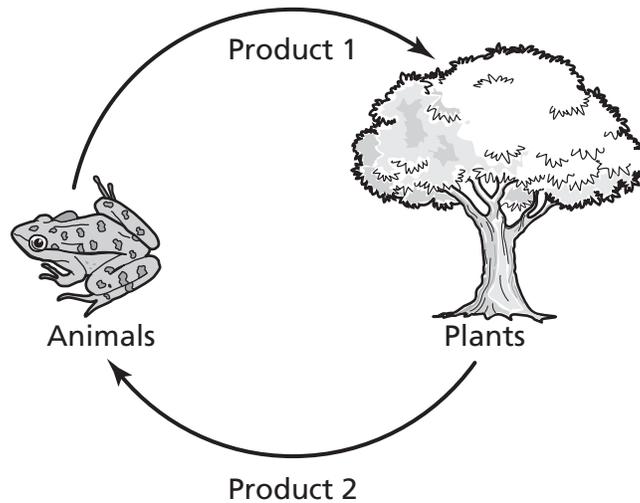
**What happens to the amount of energy in the pyramid as it moves up through the different levels?**

- A** It increases.
- B** It decreases.
- C** It increases and then decreases.
- D** It decreases and then increases.





- 10** The diagram below shows products of cellular processes flowing to organisms that can use them.



According to the diagram, Product 2 is

- F** oxygen produced by photosynthesis
- G** oxygen produced by respiration
- H** carbon dioxide produced by photosynthesis
- J** carbon dioxide produced by respiration

- 11** A plant with white flowers was crossed with a plant with red flowers. All of the offspring had white flowers.

Which of these terms describes the red flower trait?

- A** codominant
- B** recessive
- C** dominant
- D** sex-linked





**12** Which of these statements is true about plant and animal cells that are in the process of cell division?

- F** Most animal and plant cells develop a cell plate.
- G** Most animal and plant cells develop a cleavage furrow.
- H** Plant cells develop a cell plate and animal cells develop a cleavage furrow.
- J** Animal cells develop a cell plate and plant cells develop a cleavage furrow.

**13** A cell requires energy to move materials from an area of low concentration, across the cell membrane, to an area of high concentration. This process is called

- A** osmosis
- B** active transport
- C** passive transport
- D** facilitated diffusion

**14** Each body cell of a goat contains 60 chromosomes. The number of chromosomes in a goat egg cell, produced by *meiosis*, will be

- F** 15
- G** 30
- H** 60
- J** 120





**15** The equation below shows how ATP is produced.



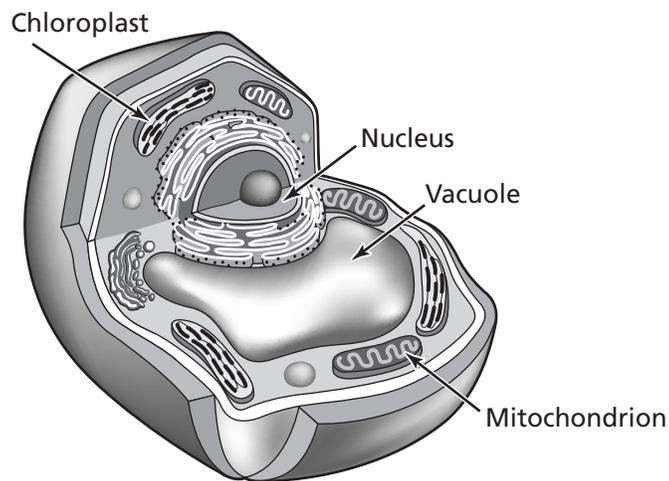
How is ATP used?

- A** as the building block of lipids
- B** as the building block of proteins
- C** as an energy source for most of diffusion
- D** as an energy source for most cellular processes

**Go On ▶**



**16** A plant cell is shown below.

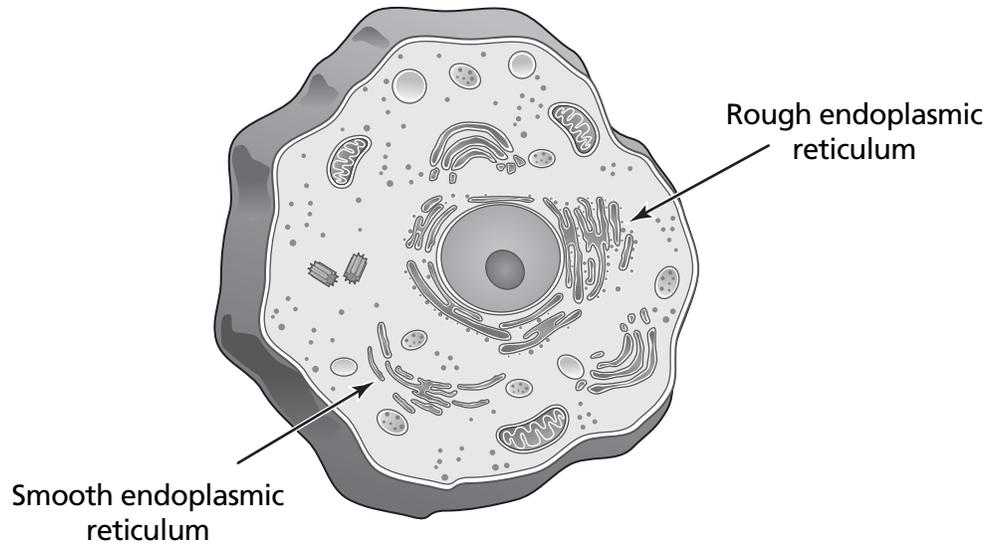


Which of these organelles uses light energy to produce sugar?

- F** the chloroplast
- G** the vacuole
- H** the nucleus
- J** the mitochondrion



**17** Study the animal cell below.



In animal cells, the endoplasmic reticulum serves as a channel for the transport of materials through the cell. The outer surface of the endoplasmic reticulum may be smooth or rough.

Which cell structures cause the outer surface of endoplasmic reticulum to appear rough?

- A the ribosomes
- B the transport proteins
- C the mitochondria
- D the Golgi bodies





**18** Which of these organelles modifies cell products and then packages them for distribution?

- F** the nucleus
- G** the cell membrane
- H** the mitochondrion
- J** the Golgi apparatus

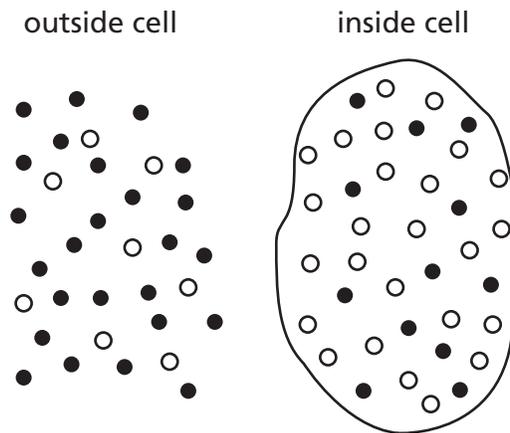
**19** Which two structures are not present in animal cells?

- A** a vacuole and a nucleus
- B** a cell wall and chloroplasts
- C** a Golgi apparatus and mitochondria
- D** an endoplasmic reticulum and cytoplasm





- 20** The diagram below shows the semipermeable membrane of a cell and the concentration of solutions inside and outside the cell.



KEY
● = solute molecule
○ = water molecule

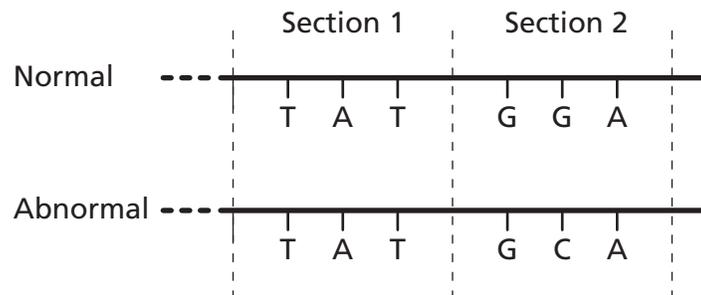
Which of the following statements best describes how the molecules will move?

- F** Water molecules will move out of the cell.
- G** Water molecules will move into the cell.
- H** Solute molecules and water molecules will move out of the cell.
- J** Solute molecules and water molecules will move into the cell.





**21** The diagram below shows a portion of a DNA molecule that codes for a normal condition and one that codes for an abnormal condition.



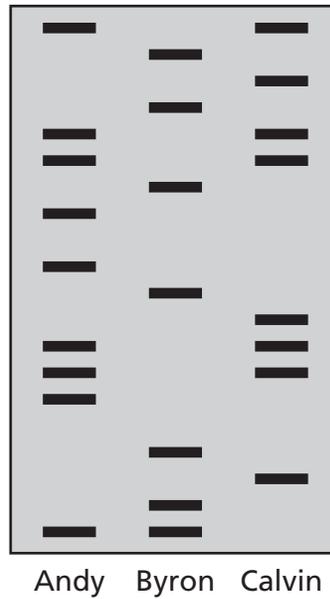
The difference between the normal condition DNA and the abnormal condition DNA shown in section two is called

- A a replication
- B a translation
- C a mutation
- D a transcription





22 The figure below shows the DNA fingerprints of three people.



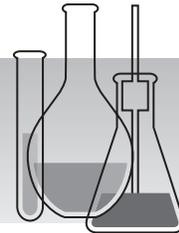
Based on the DNA fingerprints above, which of these is the best conclusion about the relationships between these people?

- F Byron is related to both Andy and Calvin.
- G Andy, Byron, and Calvin are all unrelated to each other.
- H Andy and Calvin could be related to each other, but not to Byron.
- J Byron and Calvin could be related to each other, but not to Andy.



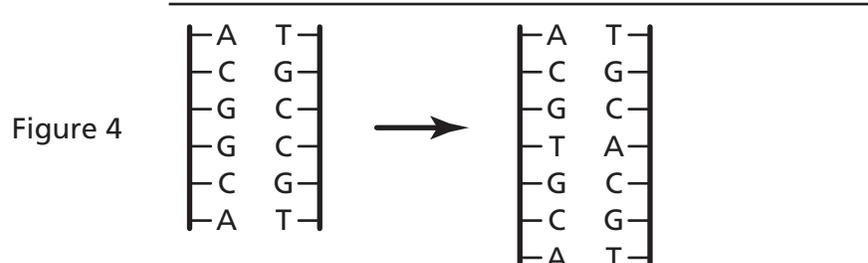
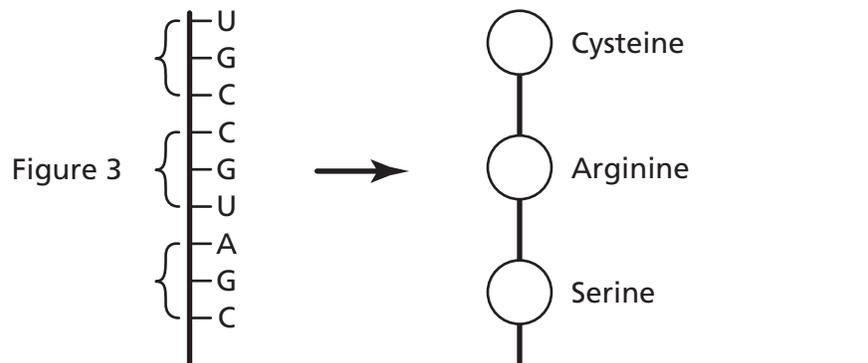
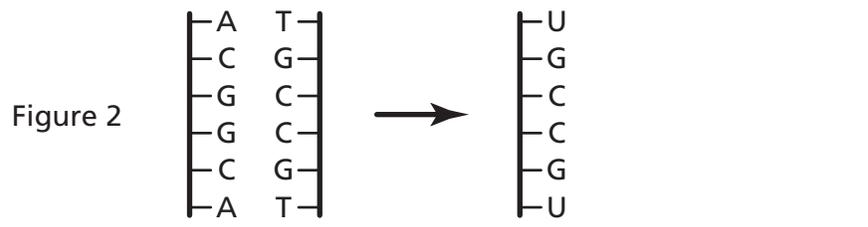
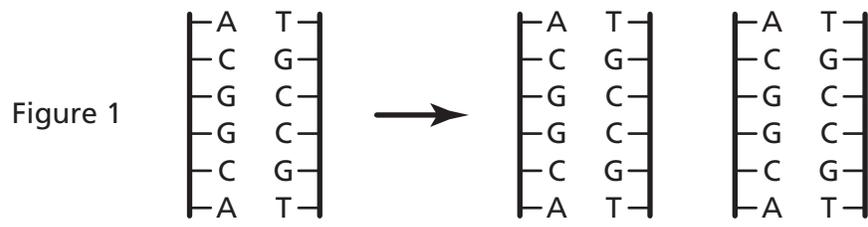


# Studying DNA and RNA



## Directions

The figures below show four processes involving DNA and RNA. Use these figures to answer Numbers 23 through 26.





**23** Which figure shows the process of transcription?

- A** Figure 1
- B** Figure 2
- C** Figure 3
- D** Figure 4

**24** Which figure shows a process in which a mutation has occurred?

- F** Figure 1
- G** Figure 2
- H** Figure 3
- J** Figure 4

**25** Figure 3 shows the production of a biomolecule. What type of biomolecule was produced?

- A** a carbohydrate
- B** a lipid
- C** a nucleic acid
- D** a protein

**26** Which figure shows the process of replication?

- F** Figure 1
- G** Figure 2
- H** Figure 3
- J** Figure 4

**Go On ►**



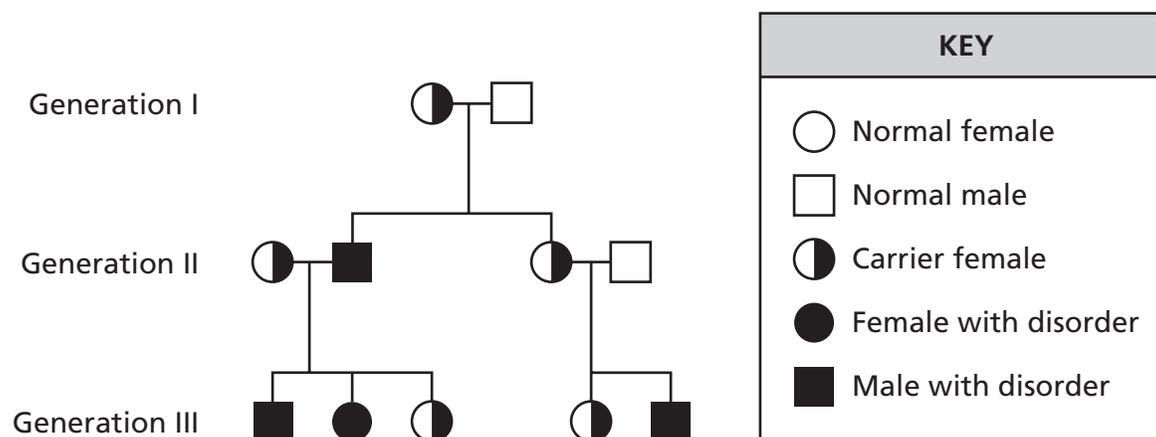
- 27** The Punnett square below shows a cross between two flowering plants. One parent has purple flowers (Pp) and the other parent has white flowers (pp).

	P	p
P	Pp	pp
p	Pp	pp

Which of these describes the offspring expected from this cross?

- A 50% white-flowered and 50% purple-flowered
- B 75% white-flowered and 25% purple-flowered
- C 75% purple-flowered and 25% white-flowered
- D 100% purple-flowered and 0% white-flowered

- 28** Look at the pedigree and the key below.



Which of these patterns of inheritance is shown for the disorder in the pedigree?

- F autosomal
- G sex-linked
- H codominance
- J incomplete dominance

**29** The two main processes by which cells absorb, release, and use energy are

- A fermentation and respiration
- B digestion and photosynthesis
- C photosynthesis and respiration
- D aerobic and anaerobic respiration

**30** A team of scientists was studying the genetics of a recently discovered organism. They learned that the allele for long legs (L) is dominant to the allele for short legs (l), and the allele for strong leg muscles (M) is dominant to the allele for weak leg muscles (m). The Punnett square below shows a cross between two of these organisms.

	LM	Lm	lM	lm
LM	LLMM	LLMm	LlMM	LlMm
Lm	LLMm	LLmm	LlMm	Llmm
lM	LlMM	LlMm	llMM	llMm
lm	LlMm	Llmm	llMm	llmm

What fraction of the offspring will most likely have long legs with weak leg muscles?

- F  $\frac{3}{16}$
- G  $\frac{4}{16}$
- H  $\frac{9}{16}$
- J  $\frac{12}{16}$

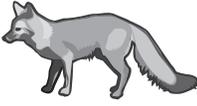
**Go On ▶**

**31** A gardener cut a branch from a shrub and planted it in a small pot where it grew into a new shrub. This method of growing a new shrub is a type of

- A meiosis
- B succession
- C sexual reproduction
- D asexual reproduction

**32** The chart below is a key to the classification of four organisms.

FOREST MAMMAL CLASSIFICATION CHART

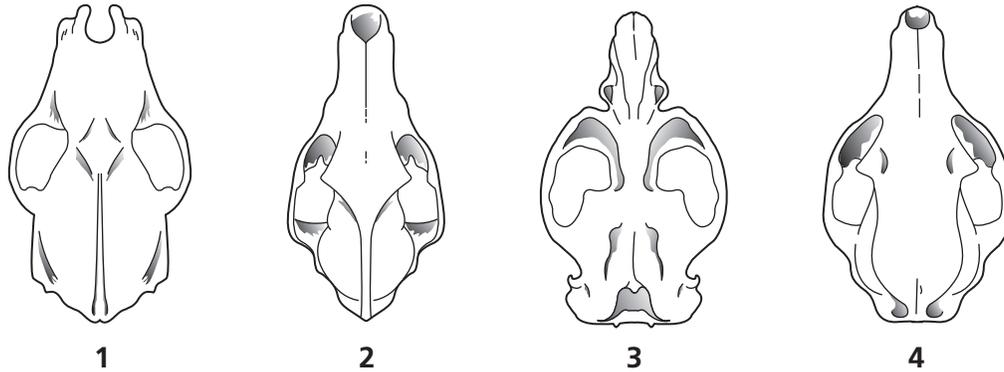
				
<b>Organism</b>	1	2	3	4
<b>Order</b>	Carnivora	Carnivora	Carnivora	Carnivora
<b>Family</b>	Canidae	Ursidae	Canidae	Canidae
<b>Genus</b>	<i>Canis</i>	<i>Euarctos</i>	<i>Canis</i>	<i>Urocyon</i>
<b>Species</b>	<i>latrans</i>	<i>americanus</i>	<i>lupus</i>	<i>cinereoargenteus</i>

According to the classification chart, which two organisms are the most closely related?

- F Organism 1 and Organism 2
- G Organism 1 and Organism 3
- H Organism 2 and Organism 3
- J Organism 2 and Organism 4



- 33** Scientists often use similarities in structure to determine how organisms are related. The diagram below shows the top view of the skulls of four different animals.



Using the structures of the skulls, which two animals are most closely related?

- A** Animals 1 and 3
  - B** Animals 1 and 4
  - C** Animals 2 and 3
  - D** Animals 2 and 4
- 34** A population of rabbits lives in a forest. During the last several years, there has been little change in the number of rabbits in this population. Which of these would most likely cause the number of rabbits to decrease?
- F** a decrease in disease
  - G** a decrease in habitat
  - H** a decrease in competition
  - J** a decrease in predation





- 35** In shallow tropical seas, brightly colored clown fish find protection from predators by swimming among the stinging tentacles of sea anemones. Unlike other fish, the clown fish is unharmed by the stinging tentacles.

Scientists think the ability of clown fish to remain unharmed among the tentacles is the result of

- A** succession
- B** parasitism
- C** natural selection
- D** selective breeding

- 36** A cross between a red rose and a white rose produced plants with only pink flowers. What is this pattern of inheritance?

- F** incomplete dominance
- G** dominance
- H** sex-linked
- J** polygenic

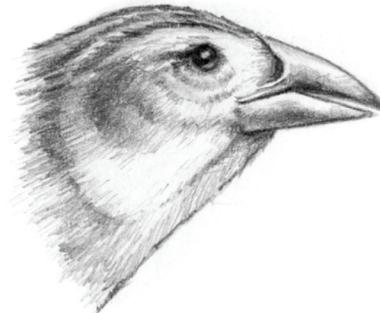




**37** Two species of finches from the Galapagos Islands are shown below.



Warbler finch



Woodpecker finch

**These two finches share a common ancestor from South America. What is the most likely way that one ancestral finch species will develop into two distinct species?**

- A** The ancestral species mated with other species and the offspring resulted in two new species.
- B** The ancestral species was genetically engineered to become two new species.
- C** Groups of the ancestral species became isolated and adapted to different environments.
- D** Two individual birds acquired many spontaneous mutations.

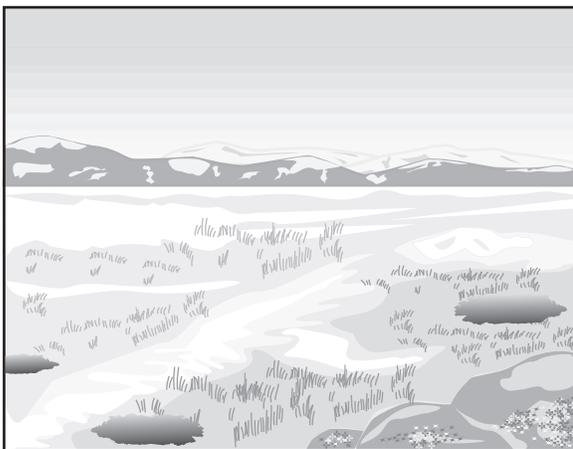
**Go On ►**





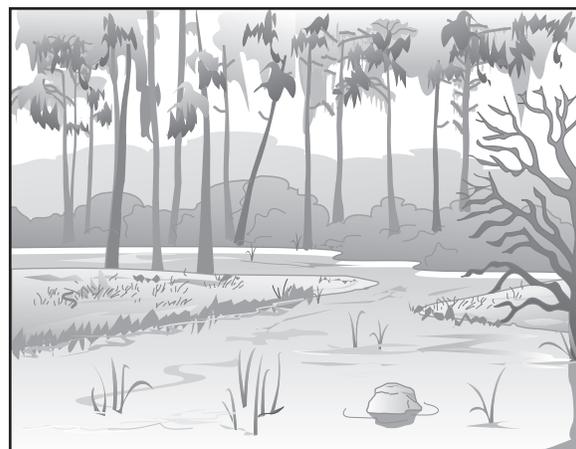
**38** An animal has a long body with a long tail. Its feet are webbed with claws on the end. It is covered in scales and has a long snout with two nostrils on top. In which of these environments does this animal most likely live?

Tundra



F

Swamp



H

Coniferous Forest



G

Grassland



J



- 39 A student performed a test on two unknown samples.

The diagram illustrates the procedure for testing two samples, A and B, using Benedict's solution. Each sample is placed in a test tube, and a few drops of Benedict's solution are added. The test tubes are then heated in a water bath. For Sample A, no color change is observed. For Sample B, a color change is observed.

**Sample A** + Benedict's solution → Heat in water bath. No color change observed in Sample A.

**Sample B** + Benedict's solution → Heat in water bath. Color change observed in Sample B.

When she added Benedict's solution and heated each sample, only Sample B turned brick-red.

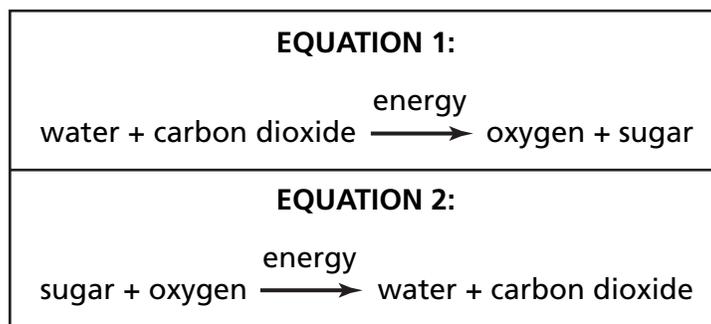
The color change the student observed in Sample B indicates the presence of

- A a sugar
- B an acid
- C a starch
- D an enzyme

**40** Which of these is a substance that controls a chemical reaction without becoming part of the product?

- F** sugar
- G** starch
- H** a lipid
- J** an enzyme

**41** Study the equations below.

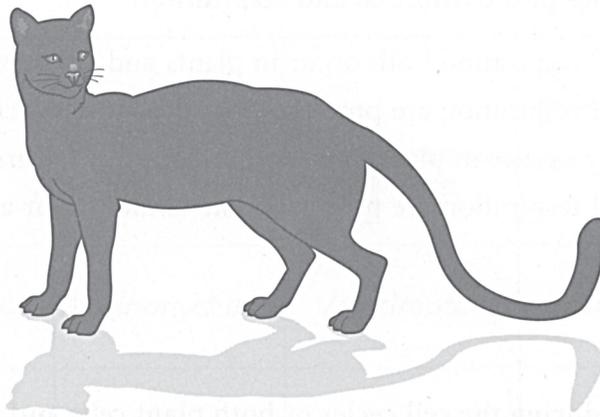


According to these equations, which of the following is a reactant during respiration?

- A** water
- B** sugar
- C** energy
- D** carbon dioxide



**Directions** Use the picture and classification key below to answer Number 42.



**Classification Key For Cats**

- 1. a. Tail is shorter than leg length ..... go to 2  
 b. Tail is longer than leg length ..... go to 3
- 2. a. Coat has obvious spots ..... *Lynx rufus*  
 b. Coat does not have obvious spots ..... *Lynx canadensis*
- 3. a. Yellowish coat with spots ..... *Leopardus pardalis*  
 b. Coat does not have spots ..... go to 4
- 4. a. Yellowish coat with buff below ..... *Puma concolor*  
 b. All brown or black coat ..... *Herpailurus yaguarondi*

**42** This cat is a member of which genus and species?

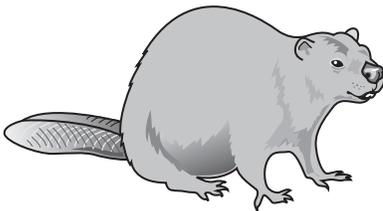
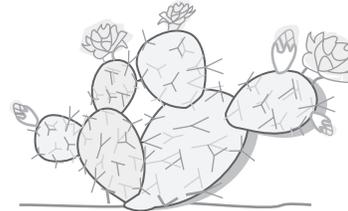
- F** *Lynx rufus*
- G** *Puma concolor*
- H** *Lynx canadensis*
- J** *Herpailurus yaguarondi*

**Go On ▶**





- 43** Which of these organisms would most likely live on a dead log in a cool, moist, shady forest?

**A****C****B****D**

- 44** Most cells in the human body undergo the process of mitosis. Some specialized human cells undergo the process of meiosis.

Which of these statements accurately describes a difference between these two processes in humans?

- F** Mutations do not occur during mitosis but they do occur during meiosis.
- G** Mitosis results in half as many chromosomes as meiosis produces in each cell.
- H** Mitosis does not usually produce variation between offspring but meiosis does.
- J** Meiosis creates new body cells and mitosis results in the formation of sex cells.

**Go On ►**



**45** Homeostasis is the tendency of living organisms to maintain a stable internal environment.

Kidneys help to maintain homeostasis by removing wastes and water from the blood. Which of these is most likely to occur if a person's kidneys suddenly stop functioning?

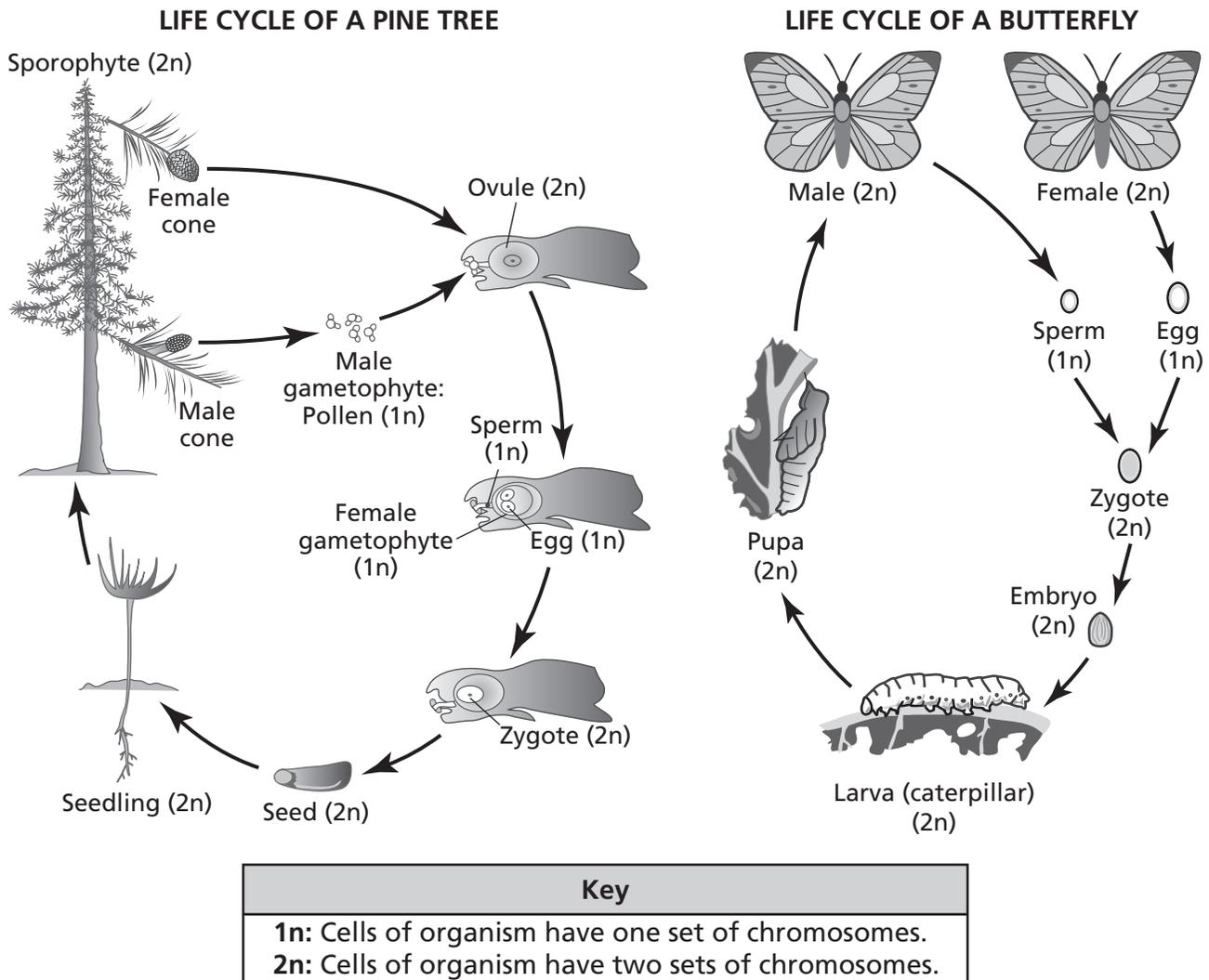
- A** an increase in stomach volume
- B** an increase in urine production
- C** a decrease in urine production
- D** a decrease in blood volume

**46** A type of lichen grows under water on rocks in the ocean. Which of these factors in the lichen's environment is *abiotic*?

- F** a fish feeding on algae
- G** the water currents around the rocks
- H** the algae found on the same rocks
- J** tiny organisms living on the ocean floor



47 These diagrams show the life cycles of a pine tree and a butterfly.



Which of these occurs during the life cycle of a pine tree but not a butterfly?

- A meiosis
- B fertilization
- C complete metamorphosis
- D alternation of generations



**48** About two thirds of this fist-sized organ lies to the left of the human body's midline. This organ consists mostly of muscle. What is the function of this organ?

- F** absorption
- G** excretion
- H** filtration
- J** circulation

**49** A scientist wants to determine how closely Tibetan antelopes are related to North American antelopes. Which of these would be most accurate to compare?

- A** their niches
- B** their DNA sequences
- C** their physical characteristics
- D** their behavioral characteristics

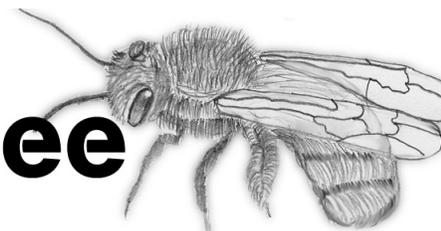
**50** Cystic fibrosis is a hereditary disease that affects the respiratory and digestive systems. Cystic fibrosis occurs when two recessive genes (*cc*) are present. A person with one allele for cystic fibrosis is called a carrier (*Cc*) of the disease.

If the mother is a carrier of the disease and the father is homozygous dominant, what are the chances that their child will be a carrier of cystic fibrosis?

- F** 25%
- G** 50%
- H** 75%
- J** 100%

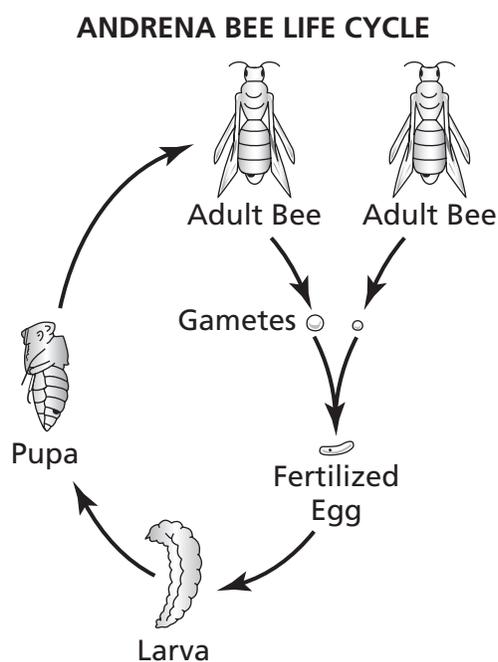


# The Andrena Bee



**Directions** Use the information and diagram below to answer Numbers 51 through 53.

*Stylops pacifica* is an insect that develops in the body of a living *Andrena* bee larva. As it develops, this insect feeds on the bee larva's tissues. The bee is harmed by the presence of *Stylops pacifica*. The life cycle of the *Andrena* bee is shown below.



**51** Which type of relationship exists between *Stylops pacifica* and the *Andrena* bee?

- A predation
- B mutualism
- C parasitism
- D commensalism

**Go On ►**



**52** Which of these terms describes the body plan of the adult bee?

- F radial symmetry
- G bilateral symmetry
- H asymmetrical
- J unilateral

**53** When the adult *Andrena* bee emerges, it carries the pupae of *Stylops* on its body. After the *Stylops* pupae mature, the female *Stylops* stay on the bee. They release a chemical to attract a male *Stylops*. Immediately after hatching, a winged male *Stylops* follows the scent of the chemical to locate a female in order to mate and produce offspring.

The *Stylops* male following the chemical to locate the female is an example of

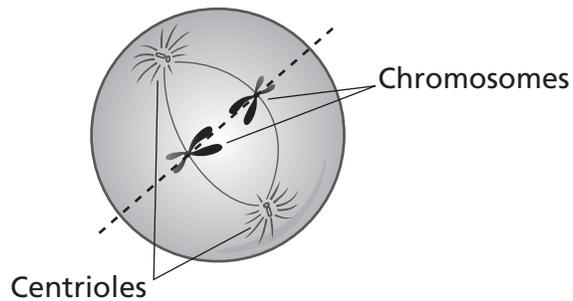
- A innate behavior
- B learned behavior
- C territorial behavior
- D mutualistic behavior

Go On ►

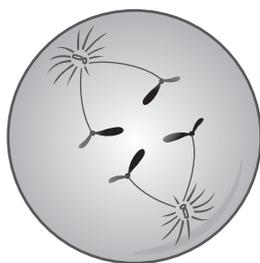




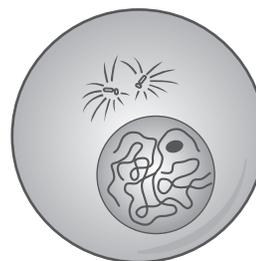
54 The diagram below shows the phase of mitosis when the centrioles are at opposite poles of the cell and the chromosomes are lined up halfway between the centrioles.



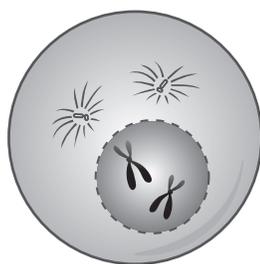
Which diagram shows the next phase of mitosis?



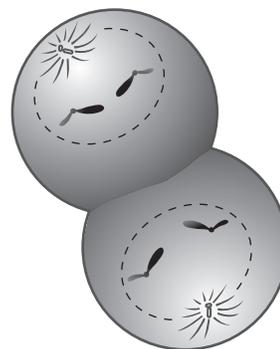
F



H



G



J





**55** Which process do cells use to release energy without using oxygen?

- A** mitosis
- B** photosynthesis
- C** aerobic respiration
- D** anaerobic respiration

**56** A species of bird in one town was observed pecking through the foil caps of milk bottles left on doorsteps. These birds would then eat the cream on top of the milk. Over a period of a few months, the same species of bird in nearby areas began to display this new behavior.

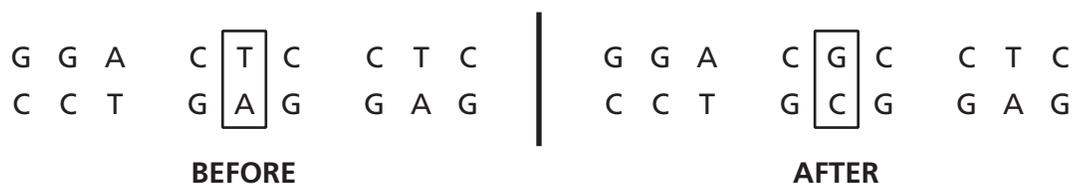
The behavior of these birds is an example of

- F** innate behavior
- G** learned behavior
- H** aggressive behavior
- J** submissive behavior

**Go On ►**



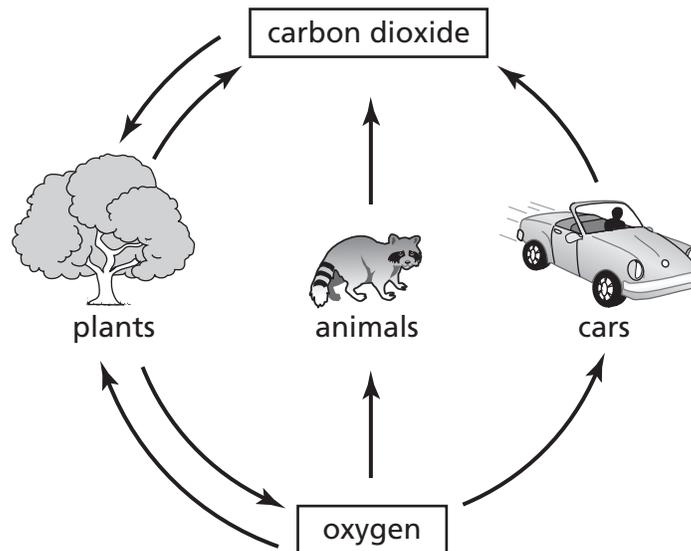
- 57** When DNA is copied, sometimes a base pair is substituted for a different base pair, as shown in the diagram below.



This substitution will most likely result in

- A** crossing over
  - B** loss of the chromosomes
  - C** a mutation
  - D** a break in the chromosome
- 58** A large number of different species live in a particular area of hardwood forest. Which of these statements best describes what would happen if the trees in this area of forest were removed and the area were converted to farmland?
- F** The producers would be replaced, but most of the consumers would remain in the ecosystem.
  - G** A large number of the original species would be replaced by an equally large number of new species.
  - H** None of the original species would survive in the changed environment.
  - J** Only a small number of the original species would survive in the changed environment.

- 59 The arrows in the diagram below represent the movement of oxygen and carbon dioxide in an ecosystem.



What is the main source of oxygen in an ecosystem?

- A combustion by cars
- B respiration by plants
- C respiration by animals
- D photosynthesis by plants



- 60** The cross of a plant with white flowers ( $WW$ ) and a plant with red flowers ( $ww$ ) is shown in the Punnett square below.

	$W$	$W$
$w$	$Ww$	$Ww$
$w$	$Ww$	$Ww$

Which of these accurately describes the genotype and phenotype of the offspring from this cross?

- F** heterozygous and white-flowered
- G** heterozygous and red-flowered
- H** homozygous and white-flowered
- J** homozygous and red-flowered

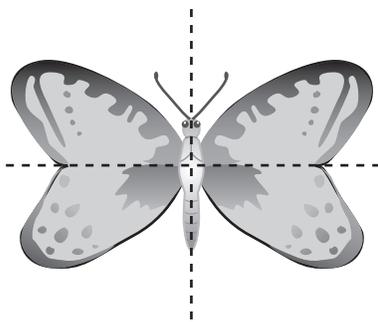




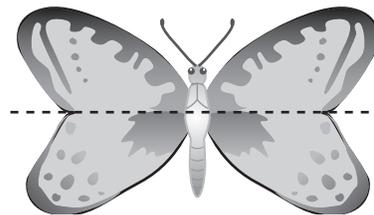
**61** An axis of symmetry is an imaginary line that divides an organism into two similar halves. An organism may have no axis of symmetry or it may have several.

KEY
--- Axis of symmetry

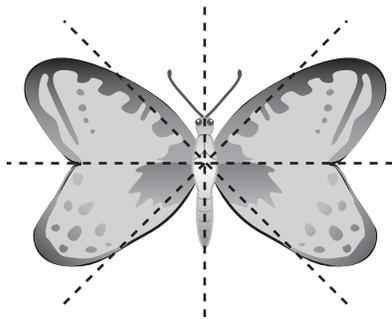
Which diagram correctly represents the symmetry of a butterfly?



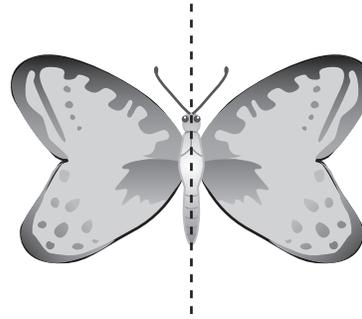
A



C



B



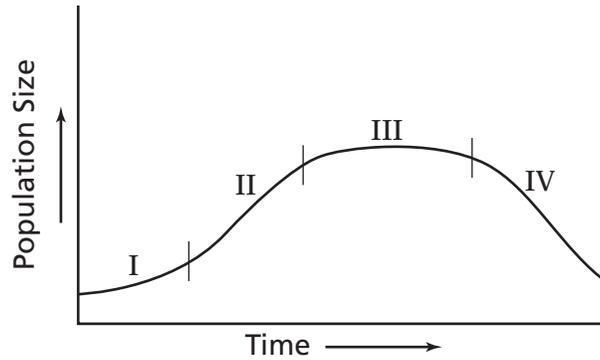
D

Go On ►





**62** The graph below shows the number of organisms in an isolated population over time.



In which part of the curve is the death rate always greater than the birth rate?

- F I
- G II
- H III
- J IV

**STOP**





## Answer Key

Item Number	Correct Answer
1	C
2	G
3	D
4	G
5	C
6	J
7	B
8	F
9	B
10	F
11	B
12	H
13	B
14	G
15	D
16	F
17	A
18	J
19	B
20	F
21	C

Item Number	Correct Answer
22	H
23	B
24	J
25	D
26	F
27	A
28	G
29	C
30	F
31	D
32	G
33	D
34	G
35	C
36	F
37	C
38	H
39	A
40	J
41	B
42	J

Item Number	Correct Answer
43	A
44	H
45	C
46	G
47	D
48	J
49	B
50	G
51	C
52	G
53	A
54	F
55	D
56	G
57	C
58	J
59	D
60	F
61	D
62	J





## Reporting Categories

Below you will find that each item has been linked to its corresponding Reporting Category. These nine Reporting Categories will be used to report scores from the actual test.

You can find the Reporting Categories and their Performance Indicators grouped together in the Tennessee Gateway Item Sampler for Science located at [www.state.tn.us/education/](http://www.state.tn.us/education/) on the Tennessee Department of Education Website.

Item	Reporting Category
1	9 – Diversity: Body Systems and Life Cycles
2	5 – Photosynthesis and Respiration
3	3 – Interactions: Between Organisms and Behavior
4	9 – Diversity: Body Systems and Life Cycles
5	9 – Diversity: Body Systems and Life Cycles
6	3 – Interactions: Between Organisms and Behavior
7	4 – Interactions: Population Dynamics and Energy Flow
8	4 – Interactions: Population Dynamics and Energy Flow
9	4 – Interactions: Population Dynamics and Energy Flow
10	5 – Photosynthesis and Respiration
11	6 – Genetics
12	1 – Cell Organelles and Biomolecules
13	2 – Cell Processes
14	2 – Cell Processes
15	5 – Photosynthesis and Respiration
16	5 – Photosynthesis and Respiration
17	1 – Cell Organelles and Biomolecules
18	1 – Cell Organelles and Biomolecules
19	1 – Cell Organelles and Biomolecules
20	2 – Cell Processes
21	7 – Biotechnology/DNA
22	7 – Biotechnology/DNA





<b>Item</b>	<b>Reporting Category</b>
23	7 – Biotechnology/DNA
24	7 – Biotechnology/DNA
25	1 – Cell Organelles and Biomolecules
26	7 – Biotechnology/DNA
27	6 – Genetics
28	6 – Genetics
29	5 – Photosynthesis and Respiration
30	6 – Genetics
31	6 – Genetics
32	8 – Diversity: Biomes and Classification
33	8 – Diversity: Biomes and Classification
34	8 – Diversity: Biomes and Classification
35	8 – Diversity: Biomes and Classification
36	6 – Genetics
37	8 – Diversity: Biomes and Classification
38	8 – Diversity: Biomes and Classification
39	1 – Cell Organelles and Biomolecules
40	1 – Cell Organelles and Biomolecules
41	5 – Photosynthesis and Respiration
42	8 – Diversity: Biomes and Classification
43	8 – Diversity: Biomes and Classification
44	2 – Cell Processes
45	2 – Cell Processes
46	3 – Interactions: Between Organisms and Behavior
47	9 – Diversity: Body Systems and Life Cycles
48	9 – Diversity: Body Systems and Life Cycles
49	7 – Biotechnology/DNA
50	6 – Genetics
51	3 – Interactions: Between Organisms and Behavior
52	9 – Diversity: Body Systems and Life Cycles





<b>Item</b>	<b>Reporting Category</b>
53	3 – Interactions: Between Organisms and Behavior
54	2 – Cell Processes
55	5 – Photosynthesis and Respiration
56	3 – Interactions: Between Organisms and Behavior
57	7 – Biotechnology/DNA
58	4 – Interactions: Population Dynamics and Energy Flow
59	5 – Photosynthesis and Respiration
60	6 – Genetics
61	9 – Diversity: Body Systems and Life Cycles
62	4 – Interactions: Population Dynamics and Energy Flow



